ACC.15
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A1298
JACC March 17, 2015
Volume 65, Issue 10S

Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

CHEST PAIN IN PATIENTS UNDER AGE 40: ARE WE GETTING IT RIGHT?

Poster Contributions
Poster Hall B1
Monday, March 16, 2015, 9:45 a.m.-10:30 a.m.

Session Title: CMR Potpourri
Abstract Category: 18. Non Invasive Imaging: MR
Presentation Number: 1241-009

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Background: Chest pain in young patients may be a diagnostic challenge. “Non-coronary” etiologies are often considered. Criteria for pericarditis include chest pain, EKG changes, pericardial effusion and a friction rub. These findings can be absent or transient. Cardiac MRI(CMR) T2 STIR and late gadolinium enhancement(LGE) imaging have been shown to be useful in detecting pericarditis. This study was designed to evaluate age cohorts of patients with and without chest pain for evidence of pericarditis using CMR.

Methods: An institutional cardiac imaging database was queried for patients who underwent a CMR protocol for evaluation of chest pain. The chest pain protocol included T2 STIR images and LGE imaging sequences. Patient cohorts were groups by age:40 and under, ages 41-50, ages 51-60, and 61 and older. Both T2 STIR and LGE findings were required. A student-t test was used to compare the mean number of pericarditis diagnoses within each age group.

Results: Of 2,323 patients in the CMR database, 931 had chest pain and underwent imaging with a chest pain CMR protocol. In the cohort of patients ages 40 and under 24.3% (35/144) of patients had pericarditis while 2.0% (2/102) had pericarditis without chest pain (p<.001). Other age group results are shown in Graph 1.

Conclusion: These data suggests that the likelihood of pericarditis as the cause of chest pain is greater in younger patients, and decreases with advancing age. Furthermore, less than 2% of patients without chest pain have CMR evidence of pericarditis.

Graph 1: Incidence of Pericarditis on CMR in Patients With and Without Chest Pain by Age